



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/481,396	01/12/2000	Koichiro Tanaka	0756-2092	5586

31780 7590 08/19/2004

ERIC ROBINSON
PMB 955
21010 SOUTHBANK ST.
POTOMAC FALLS, VA 20165

EXAMINER

RODRIGUEZ, ARMANDO

ART UNIT PAPER NUMBER

2828

DATE MAILED: 08/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/481,396

Applicant(s)

TANAKA, KOICHIRO

Examiner

ARMANDO RODRIGUEZ

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,2,4,5,7-12,17-23 and 27-34 is/are allowed.
- 6) ☒ Claim(s) 3,6,13-16,24-26 and 35-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7-26-2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claims 1-37 are pending.

Allowable Subject Matter

The indicated allowability of claims 3,6,13-16,24-26 and 35-37 are withdrawn in view of the newly discovered reference(s) to Sano (PN 6,323,937). Rejections based on the newly cited reference(s) follow.

Claims 1,2,4,5,7-12,17-23,27-34 are allowed.

The following is an examiner's statement of reasons for allowance:

After reviewing applicant's amendment, arguments and conducting an updated search none of the cited prior arts alone or in combination discloses the claimed laser irradiation apparatus having the recited limitations of independent claims 1,2,7,10 and 13, where the shape of the laser beam is modified before entering the cylindrical lens group for providing a uniform annealing laser beam.

Regarding claims 1,4,7-12,17-20,27-34,

The laser beam is modified in particular by a slit located between the beam generating and the cylindrical lens group for making edges of the emitted laser beam.

Regarding claims 2,5,21-23,

The laser beam is modified in particular by the width of the cylindrical lens group, which is narrower than the width of the emitted laser beam.

Priority

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 3,6,13-16,24,25,35 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Sano (PN 6,323,937).

Regarding claims 3,6,13 and 14,

Figure 4 illustrates a laser system having a laser source (1), a cylindrical lens group (3b) and (3c) for dividing the laser beam, a condenser optical system (4) which overlaps the divided laser beams and a slit (9) for shaping the laser beam, as described in column 4 line 40 to column 5 line 42. The shape of the laser beam formed by the slit is illustrated in figure 4 as the light intensity distribution, which is shown as having edges.

Regarding claims 15 and 16,

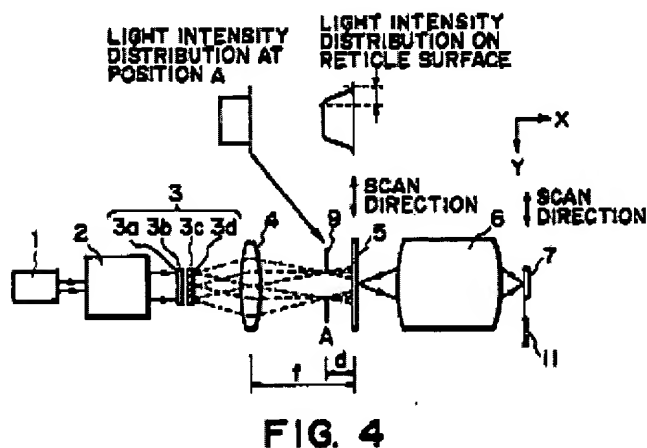
Figure 4 illustrates irradiating a photosensitive substrate (7), as described in column 5 lines 24-27, which is a semiconductor substrate.

Regarding claims 24 and 35,

The substrate (7), which is irradiated by the laser beam, will become crystallized by the heat of the laser beam.

Regarding claims 25 and 36,

Figure 4 illustrates a condenser optical system (4), which overlaps the divided laser beams and is in the shape of a convex lens.



Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2828

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (PN 6,323,937) in view of Shiraishi et al (PN 6,100,961).

Regarding claims 26 and 37,

In figure 4 Sano illustrates a laser system having a laser source (1), a cylindrical lens group (3b) and (3c) for dividing the laser beam, a condenser optical system (4) which overlaps the divided laser beams and a slit (9) for shaping the laser beam, as described in column 4 line 40 to column 5 line 42. The shape of the laser beam formed by the slit is illustrated in figure 4 as the light intensity distribution, which is shown as having edges.

Sano is silent to the laser source (1) providing a harmonic beam.

However, it is well known in the art to use an excimer laser or a YAG laser, which provide a harmonic wave for irradiating a substrate, as, disclosed in column 26 of Shirashi et al.


Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to ARMANDO RODRIGUEZ whose telephone number is 571-272-1952. The examiner can normally be reached on 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2828

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


ARMANDO RODRIGUEZ
Examiner
Art Unit 2828


MINSUN HARVEY
Supervisor
Art Unit 2828

AR/MH